ment of £4,334 to the common university fund, a heading which practically did not exist in 1883; while during these ten years contributions to the salaries of the professoriate have increased from £12,840 to £15,034. It seems pretty clear that the results of agricultural depression have fallen almost solely upon the fellows, and upon some of them hardly."

Professor Bunsen celebrated his eighty-fifth birthday on March 31st.

At the last meeting of the Geological Society, Prof. Judd drew attention to an interesting series of photographs sent for exhibition by Prof. Liversidge, of Sydney, who has found that sections of gold nuggets, when etched with chlorine-water, exhibit lines like the Widman-Stetten figures of meteorites, showing that the gold has a crystalline structure, octahedral and cubic forms being displayed.—*The Academy.*

SOCIETIES AND ACADEMIES.

BIOLOGICAL SOCIETY OF WASHINGTON.

At the meeting held May 18th Dr. Merriam spoke of the Mammals of the Pribilof Islands in Bering Sea. Excluding Cetaceans, eight mammals are known from the Islands. Four of these are land mammals and four amphibious or marine, as follows: One, Arctic fox; two, brown lemming; three, shrew; four, house mouse; five, harbor seal; six, fur seal; seven, sea-lion; eight, walrus. To these the sea-otter might be added, though it is not a resident and visits the islands very rarely. The house mouse was introduced by the Russians and has run wild. The fox also is said to have been introduced. The shrew has been found on St. Paul only; the lemming on St. George only.

A paper entitled 'The Hares (genus *Lepus*) of the Mexican Border' was read by Dr. Edgar A. Mearns, who stated that it was written in the course of preparation of a report on the collections made by the biological section of the recent re-survey of the Mexican boundary line, of which expedition Dr. Mearns was the surgeon and naturalist from January, 1892, to September, 1894, with one intermission of a few months. The doctor's field experience in that general region covers in all a period of seven years. The specimens of *Lepus* accumulated during that time amount to 288, representing 15 species and subspecies, to which material were added the collections of the United States National Museum and a portion of those of the American Museum of Natural History in New York, making a total of about 400 specimens examined. The species of the Mexican border were shown to represent three sections of the genus *Lepus*, which might with advantage be recognized as subgenera. These were Hydrolagus Gray (Water Hares, represented by a single species, *Lepus aquaticus* Bachman); Sylvilagus Gray (comprising (1) the Cottontails, 3 species and 3 additional subspecies, and (2) the Cactus Hare, *Lepus cinerascens* Allen); and Macrotolagus (a new subgenus created for the Mexican group of Jackrabbits, of which 6 species and 3 additional subspecies were found on the Mexican border). In all, 17 forms were recognized as occurring on the strip of the United States which borders on Mexico, of which number seven were treated as subspecies and the remainder as species, of which latter there are eleven, *Lepus sylvaticus* being represented by (3) subspecies. Two species and four subspecies were described as new. Of these, Holzner's Cottontail inhabits wooded mountains from New Mexico and Arizona southward, and the Lesser Desert Cottontail the region from the upper Rio Grande of Texas westward to the continental divide. The black-naped Jackrabbit of the Lower Rio Grande was named in honor of Dr. C. Hart Merriam; and another species of Jackrabbit from the

plains east of the continental divide was dedicated to Lieutenant D. D. Gaillard, U. S. A., a member of the International Boundary Commission. The Gray Jackrabbit of the Upper Rio Grande region, and the Desert Jackrabbit of the Colorado Desert, were described as superficially distinct from the *Lepus texianus* Waterhouse. The Mexican Jackrabbit (*Lepus callotis* Wagler), with which several species inhabiting the United States have hitherto been confounded, was shown, principally on the authority of Dr. C. Hart Merriam, as the result of explorations lately conducted in Mexico by his Division of the U. S. Department of Agriculture, to be wholly extralimital to the United States, and not to occur near our southern border.

Diagnoses of the new Hares discovered by Dr. Mearns will soon appear in the proceedings of the U. S. National Museum, the complete article to form a part of the biological report of the International Boundary Commission.

Dr. Erwin F. Smith read a paper on *The Biology of Bacillus tracheiphilus* n. sp., *the cause of wilt in various Cucurbits.* The organism has been isolated and numerous infections secured from pure cultures—more than fifty—in the greenhouse under strict control. The disease has also been induced by spraying the bacillus on insects (Diabrotica vittata and Coreus tristis) and turning these loose on the plants, thus confirming a belief expressed in 1893, and due to field observations, that the disease is ordinarily transmitted by leaf eating beetles and squash bugs. During the nine months in which experiments have been conducted under glass, the only cases have been those due to artificial infections, none of the numerous control plants having developed the disease. The paper described the morphology of the organism, its behavior in various media—agar, gelatine, potato and sweet potato, beef broth, vegetable infusions, milk and various saccharine fluids in fermentation tubes; resistance to heat and dry air; behavior with stains; growth in acid and alkaline media, in hydrogen; parts of plants attacked, lesions, symptoms, time of appearance after inoculation, etc. Numerous repeated inoculations into potato and tomato vines failed to induce any disease, and the positive and negative evidence are both conclusive that this disease is entirely different from the southern potato and tomato blight. Inoculations into pears and hyacinths also gave negative results. The organism used for infections was isolated from the cucumber, and most of the inoculations were performed on the cucumber and muskmelon by pricking the germs into the blade of a leaf. Experiments on pumpkins and squashes are still in progress. The prompt destruction of leaf-eating and leaf-puncturing insects appears to be the only satisfactory way of combating this disease. How this shall be done to best advantage is a problem belonging to the province of economic entomology.

An interesting paper on the *Means of Intercommunication among Wolves*, by Mr. Ernest Thompson, was read. Mr. Thompson gave first place to the sense of smell as a means of obtaining information.

M. B. WAITE,
Recording Secretary.

THE NEW JERSEY STATE MICROSCOPICAL SOCIETY.

THE Society held its 26th annual meeting on Monday, May 27th, and elected the following officers for 1895–96:

President, Byron D. Halsted, Sc. D.
Vice-President, Julius Nelson, Ph. D.
Recording Secretary, Frederick H. Blodgett.
Corresponding Secretary, John Helm, M. D.
Treasurer, A. C. Hutton, M. D.
Curator, A. H. Chester, Ph. D.
Librarian, Frederick H. Blodgett.
Trustee (two years), Fred. B. Kilmer.

The Secretary's report showed an increase in general interest on the part of the members and an increase also in the attendance of visitors at the regular meetings.

The quarter-centennial was celebrated by a well attended public meeting. The program of this meeting included the projection of micro-slides of rock sections, marine algæ, living animalculæ and wood sections, and table exhibits from the three natural kingdoms under thirty-five instruments.

About a year ago the Society was sectionalized, and the following sections created:

(1) Agriculture, (2) Bacteriology, (3) Biology (Zoölogy), (4) Botany, (5) Chemistry, (6) Entomology, (7) Geology, (8) Histology, (9) Mineralogy, (10) Pathology, (11) Physics, (12) Technique, (13) Literature.

Of these the sections on Bacteriology, Botany and Mineralogy have had charge of one meeting each, and reports of less length have been made by the sections on Technique and Literature.

The membership includes 40 active, 19 corresponding and 1 honorary member.

After the business session A. H. Chester, Ph. D., read a paper on 'Crystals,' describing the means used in the preparation of crystals for micro-mounts; slow crystallization from fusion, or solution, sublimation, precipitation and electrolysis. The paper described the systems of crystals to some extent, mentioning more especially those of gold, silver and copper. With the aid of ten microscopes the minute beauties of the crystals were shown, with appreciation to a goodly number of members and friends.

SCIENTIFIC JOURNALS.

AMERICAN JOURNAL OF SCIENCE, JUNE, 1895.

The June number of the American Journal of Science opens with an article by Prof. Frank Waldo discussing the daily march of the wind velocities in the United States. This is based upon the published data furnished by the Chief Signal Officer's Report for 1890, giving the average wind movement for each hour of each day in this year, and also the daily averages for the seven years 1883–89. These are discussed for the different portions of the country and the results presented in a series of curves; they show distinct maxima for many stations in January, which are still more developed in July. D. A. Kreider describes the preparation of perchloric acid and its application to the determination of potassium; also W. H. Hobbs, the crystal form of borneol and isoborneol. R. Ruedemann gives an abstract of a paper (to appear in full in the Report of the New York State Geologist) on the mode of growth and development of the graptolitic genus Diplograptus; a series of figures illustrates the subject. N. H. Darton gives an account of the recent discovery of a dike penetrating the Salina formation at DeWitt near Syracuse, N. Y.; this occurence is of especial interest because doubtless connected with the Syracuse dike described by Dr. G. H. Williams in 1887. The petrography of the DeWitt dike is fully given by J. F. Kemp. Another article is by G. M. Dawson, giving a general discussion of the amount of elevation that has taken place along the Rocky Mountain Range in British America since the close of the Cretaceous; the minimum estimate obtained of greatest uplift for the region (about latitude 50°) is 32,000 to 35,000 feet. Three analyses of sodalite are given by L. McI. Luquer and G. J. Volckening. The number closes with a series of abstracts and reviews, and finally the volume index. Under the Geological Notes, R. T. Hill mentions the discovery of a dicotyledonous flora in the Cheyenne sandstone at the base of the beds belonging to the Comanche series in Comanche and Barber counties, of southern Kansas.